Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

GEOGRAPHICAL RECORD

AMERICAN GEOGRAPHICAL SOCIETY

Meetings of November and Elections to Fellowship. The first regular monthly meeting of the American Geographical Society for the season of 1921-1922 was held on November 22 at the Engineering Societies' Building, 29 West Thirty-ninth Street. President Greenough presided. There were presented with the approval of the Council the names of 384 candidates who were duly elected as Fellows of the Society. Thereupon the Society was addressed by Professor Henry E. Crampton on "Guam, Siam, and Java—Three Representative Countries of the Far East." In this well-illustrated lecture Professor Crampton described his sixth journey in the Pacific Islands, the latest of eleven journeys in the tropics.

A special illustrated lecture on "Present-day China" by Mr. J. O. P. Bland was given on November 10 at the Society's Building, Broadway at 156th Street. Mr. Bland was for many years associated with the Chinese government and is well known as the author of several standard works on China. He made an earnest plea for the support of China that the country's unique civilization might continue to develop along native lines.

Distribution of Title Page, Contents, and Index of Volume 11 of the "Geographical Review." The title page, table of contents, and index for Volume 11 of the *Geographical Review* (1921), which is issued separately, is ready for distribution. Copies are sent to all institutions exchanging publications with the Society and to individuals who request that their names be put on a list for this purpose.

NORTH AMERICA

Canada's Boundaries. "The Unguarded Boundary," an address by Ambassador John W. Davis as President of the Birmingham and Midland Institute of Great Britain for 1920, recalls the satisfactory condition of affairs respecting the boundary between the United States and Canada. The amicable settlement of this international boundary may be regarded as a great achievement in view of the length of line—5,400 miles—and the variety of natural conditions encountered and the variety of conflicting claims invited thereby. These conditions are graphically sketched by Ambassador Davis in recounting the romance of the early days of the frontier and the history of the subsequent boundary negotiations beginning with the treaty of 1783 and terminating with the decision of the Alaskan tribunal in 1903.

The work of surveying, defining, and marking the boundary is nearing an end. Surveying of the southern boundary is practically completed, and the maps are being made upon which the commissioners lay down the line in its final position. In certain sections, particularly from the Lake of the Woods to Lake Superior, along Hall's Stream (a headwater stream of the Connecticut River), St. Francis River, and the line from the source of the St. Croix River to Passamaquoddy Bay, the final determination remains to be made, but it is not anticipated that any serious differences will arise. As regards the boundary between Alaska and Canada the section along the 141st meridian, that is from the Arctic Ocean to Mt. St. Elias, has been demarcated (Report and Atlas published in 1918); and the "natural" boundary from Mt. St. Elias to Cape Muzon, the southern extremity, has been laid down and agreed upon, and reports and maps are in preparation.

The Dominion, however, has a boundary question on its hands in the dispute with Newfoundland over Labrador. Since 1763, with a lapse between 1774 and 1809, Newfoundland has had jurisdiction over a portion of the "coast" of Labrador (James White: Boundary Disputes and Treaties, Toronto, 1914). The wording of the Labrador Act of 1825, which was supposed to be definitive, is obscure. All that the Act established beyond question was the short stretch of boundary due north from Blanc Sablon to the 52nd parallel. Northward, indeed, there was no immediate practical need for settlement; interest in the region was confined to the seaboard frequented by Newfoundland fishermen. Recently, however, attention has been called to the lumbering possibilities of the interior, which have been proved to be considerable, and to the possibilities of mineral resources which remain to be investigated. Development is precluded until land titles are assured, and this awaits settlement of the boundary issue. Quebec, which since 1912 has included all the remaining portion of the peninsula, claims the limitation of Newfoundland to a narrow coastal strip. Newfoundland makes claim to a considerable hinterland, including the timberlands of the Hamilton River basin. A commission is now at work on the problem (*Current History*, New York Times, February, 1921, pp. 264–265). It is suggested that an ultimate result of the case will be inclusion of Newfoundland in the Dominion of Canada.

SOUTH AMERICA

Memorial to James Orton on Lake Titicaca. On the shores of Lake Titicaca on September 25 of last year there was unveiled a memorial to James Orton, one of the group of American explorers, who in the latter half of the last century made material contribution to our knowledge of the upper Amazon basin (*West Coast Leader*, Sept. 17 and Oct. 1, 1921). On his first expedition (1867) Professor Orton crossed the Ecuadorean Andes and descended the Napo. One of the results was "The Andes and the Amazon" (1870), a volume that went into three editions. The third edition also included notes on a second journey in 1873 up the Amazon to Yurimáguas on the Huallaga and thence over the Andes. In 1876 Professor Orton organized a third expedition with the object of exploring the Beni. On this he was accompanied by Ivon Heath, brother of Edwin Heath who a few years later made a successful exploration of that river. The party proceeded via Cochabamba and Trinidad to within 25 miles of the confluence of the Beni, where in consequence of a mutiny by the Indians of the party their plans were abandoned. They turned back up the Mamoré to Exaltación and thence across the pampas to Reyes and over the Andes by Apolobamba, an exhausting journey of 600 miles. To the hardships encountered Professor Orton succumbed while crossing Lake Titicaca. He was buried on Esteves Island, a rocky islet in the Bay of Puno. It is here that the memorial, a monument of New Hampshire granite in the form of the ancient Inca burial towers, has been erected. It was contributed by the Alumnæ Association of Vassar College, where Orton was professor of natural history at the time of his death. Presentation was made to the Peruvian Government by a delegation from the Association at a ceremony attended by members of the diplomatic corps and representatives of scientific and educational institutions.

EUROPE

The Economic Geography of Northern Sweden. Northern Sweden (Norrland) has an area of some 100,000 square miles—60 per cent that of Sweden as a whole—and a population a little over 1,000,000, that is 18 per cent of the total population of the country. Small as this figure is it represents a great relative gain on that of a half-century ago, a gain furnished in part by a relatively great natural increase and in part by immigration from more southerly regions. This movement of the population follows on industrialization of the region, a process described in detailed and well-illustrated fashion by H. W. Ahlmann in a recent number of *Geografiska Annaler* (Vol. 3, Parts 1 and 2, 1921, pp. 96–162). Figures showing the occupational distribution of the population, while only approximate, are significant of the change. For the southernmost district of Norrland (Gävleborg) percentages of population engaged in farming, forestry, and allied occupations; in mining and manufacturing; and in trade communications respectively were 79, 11, and 2 in the year 1840; while they were 44, 38, and 13 in 1910. For the northernmost district (Norrbotten) the figures are 89, 4, and 1 for 1840; and 60, 25, and 10 for 1910. (Compare the notes and see the maps on regional divisions of Norway in *Geogr. Rev.*, January, 1921, pp. 143–145.)

As regards economic development Norrland suffers under the handicap of its far-northern situation, involving relative inaccessibility and severe climate, and its unfavorable surface, presenting vast expanses of bare Archean rock. Its assets lie in its forests, its waterways, water-power resources, and iron-ore deposits. The forests are the greatest asset. Economic transformation of Norrland began with transformation of forest economy based on the introduction of steam sawmills in the sixties of the nineteenth century. Development of the lumber industries strengthened the already pronounced discrepancies of regional population distribution. The sawmills were placed at the river mouths, or rather on the bays beyond the river deltas or on the inner shores of the fringing islands, provided with sheltered fairways, good harbors, and sufficient space. Lumber is easily floated down from the interior to the coast. It is estimated that there is 1 kilometer of waterway suitable for floating logs to 9.5 square kilometers of surface and that the average maximum distance for the hauling of logs is no more than 7 or 8 kilometers. Woodworking industries are thus concentrated on the seaboard, save charcoal burning and the associated production of tar and turpentine, which remain in the forests. The scanty population of the great Archean plateau is reflected in the bare one per cent of its surface under cultivation. The eastern plain has 66 per cent of the population and 80 per cent of the town dwellers. Round the sawmills of the Sundsvall district there are 600 to 800 people per square kilometer (1,550 to 2,000 per square mile). Sundsvall itself is a center of 16,861. To the new settlements on the outer border of the coastal plain the old towns, usually situated some distance up the river, act as administrative and trade centers.

The growth of population dependent on the present phase of forestry exploitation terminated a decade or so ago. Since 1900 the movement of migration has been reversed, many thousands of people leaving Norrland. The population of the sawmill districts of Sundsvall has declined, and so has that of several rural districts adjacent to industrial areas. In spite of the addition of the pulp industry in the last decade (it was earlier in southern Sweden), production and export of lumber has increased little since 1900. From large areas the first forest crop has been taken. Modern sawmills, furthermore, need fewer hands in proportion to the output. Future of the lumbering industries is dependent largely on the adoption of a rational system of forestry management. Attention should be paid to development of the charcoal industry, of importance in relation to the iron industry of the north: it would further tend to an increased population in the forest areas.

Future economic expansion is also dependent on utilization of the hydro-electric resources of the region. Out of a total of 5 to 6 million horse power for all Sweden, upper Norrland has 2,400,000 horse power, and lower Norrland with Dalarne 2,500,000. Of the latter 15 per cent has been developed, only 7 per cent of the former. There is hope of establishing such electrometallurgical and electrochemical industries as have been established in the French Alps. In the extreme north of Norrland, in latitude 67°–68° N., are the valuable iron-ore deposits of Kiruna and Gällivara which up to the present time have been exported in the raw state.

Economic expansion will be further conditioned by improvement in communications. Raw materials collected in the interior and brought down the northwest-southeast-trending valleys are concentrated at the river mouths to be sent by sea, the great highway of Norrland trade both import and export. Of the export trade (chiefly iron ore and lumber and other forest products) about 33 per cent is across the Norwegian border, less than 2 per cent by rail southwards, the rest by sea. Of the import trade (chiefly wheat and coal) about 3 per cent is across the Norwegian border, 7 per cent by rail from the south, the rest by sea. Yet navigation is suspended for several months during the winter. It should be made continuous or at least extended by the use of ice breakers, as is done on the eastern shores of the Bothnian Gulf, at Hangö, for instance.

With the exception of the ore railroads of the north, the railroads of Norrland have been of comparatively slight importance. There is, however, now under projection the Inland Railway which will connect the far north with an ice-free port in Swedish territory (in Göteborg). It will traverse the eastern border of the lake zone. Electrification of the railroads is also proposed.

It is hardly likely that there will be any great agricultural expansion as an independent movement, though completion of the Inland Railway will encourage farming in the richer lands of the interior, the "Silurian" zone of limestone soils and the lake zones with their alluvial patches. Agricultural expansion, however, is likely to accompany industrial expansion. At present agriculture is concentrated about the mouths and lower parts of the rivers, but even in the coast region only one-fifth of the land estimated cultivable is in use.

Racial Composition of the Population in Northern Norway. A not uncommon misconception that northern Norway is populated mainly by Lapps and Finns has led the Norwegian Central Bureau of Statistics to issue a pamphlet setting forth the numbers and distribution of the racial elements in this region (Befolkningsforholdene i Nord-Norge med saerlighensyn til nasjonalitet, Christiania, 1920). A table showing population according to the census of 1910 is accompanied by a map on the scale of 1:1,000,000 showing population of communes and prefectures by circles of area proportional to population (1 square millimeter representing 10 persons). The circles are colored according to race—Norwegian, Lapp, Finn. The map, it may be noted, has been prepared by the Inspector of the reindeer pastures for the Ministry of Agriculture and, while exact representation is always difficult in a region of mixed population, is believed to be as accurate as possible.

The whole of northern Norway had a population of 280,785 in 1910, of whom 6.5 per cent were Lapps and 2.8 per cent Finns. In the northeasternmost prefecture, Finmark, Lapps formed 26.4 per cent and Finns 13.3 per cent of the population. Only in a few small districts, mainly inland, was there a Lapp majority. In the southwestern prefecture (Nordland) Lapps numbered 1.1 per cent and Finns less than .1 per cent. Norwegians, furthermore, are increasing both absolutely and relatively. There is a well-marked migration into the north from more southerly regions.

There is a similarly small proportion of Finns and Lapps in northernmost Sweden. Lapps in Norrland numbered 7,000 in 1910 and Finns 24,770 out of a population of over 1,000,000 (see note above). In both instances they form an altogether strange element in the occupation of the land. A number of the Lapps are nomadic, and their movements provoke the usual troubles that rise between settled and migratory peoples. The Lapp reindeer damage the hay of the Swedish farmer. More seriously, international disputes arise. The nomads are not respecters of boundaries; their pasture lands extend indifferently across the frontier. Some few years ago commissions were appointed to settle the international difficulties, and in 1920 a reindeer pasture convention was made between Sweden and Norway.

AFRICA

The Political Geography of Italian North Africa. About a hundred years ago the founder of the Senussi confraternity, one of many that sprang to life within the Mohammedan world, withdrew from the Europeanized sections of the coast and established himself in an isolated and remote portion of the Sahara, the hinterland of Cyrenaica. Thence his power and that of his successors spread through a large section of the desert and even beyond its southern border. Established eventually in the oases of Kufara which became the center and capital of the Senussi realm, the Senussi leaders exercised a wide and profound influence. The trans-Saharan trade not only passed through the heart of their territory, it was fostered and welcomed. Free hospitality was offered any traveler for a period of three days. Moreover, the oases of Kufara are virtually self-supporting and are protected by a one-hundred-mile belt of sand dunes and by a still wider stretch of all but waterless desert. The geography of the region is admirably adapted to the support of one of the prime conditions of the founder that his people should keep away from the centers of civilization and unite various Bedouin tribes in one great religious organization.

If we have this picture before us and if we also appreciate the sinister reputation which the Senussi had among Europeans for a half century, we are prepared to understand the very extraordinary change of situation that has been brought about by Italy within the past few years. Sayed Idris, the head of the Senussi, has visited Rome; and he has made a treaty with Italy! He has been given the hereditary title of Emir and is the acknowledged independent ruler *on behalf of Italy* over the oases of Kufara, Jaghabub, Jalo, Aujila, and Jedabiya.

This vital change of policy on the part of the Senussi may affect the whole Mohammedan world, for Libya has been recognized for the past half century and more, as a critical area in the struggle of Moslem against Christian, with the Moslem situated in the desert whence war was waged against an European population on the coast. The struggle was long continued though fitful until 1911, when, in the Turco-Italian War, Italy pushed her frontier across the Mediterranean and established herself upon the northern coast of Africa; and thus the power of Rome once more claimed a long abandoned portion of the empire of the Cæsars. A war with the Senussi was inevitable and continued through the World War. The weakness of Senussi power was rather definitely revealed when Senussi troops attempted to invade Egypt. The British defeated the Senussi forces in February, 1917, at the oasis of Siwa, and since that time Italy's path has been easier. Finally, in November 1920, by the accord of Regima, the Italian government and the Senussi ratified the so-called Italo-British Agreement. This agreement was made between the British and Italian governments, on the one hand, and Sayed Idris as the head of the Senussi on the other.

By the terms of the agreement the Italian government will retain the coast towns and certain posts it now occupies a short distance inland, but it will create no new posts. The

Italian government also maintains courts and schools, pays monthly allowances to certain members of the Senussi in addition to supplying them with arms, ammunition, equipment, and food up to the amount required for four thousand men. The purpose of the last stipulation is to enable the Senussi to maintain public security in the interior of Cyrenaica. On their part the Senussi agree to maintain peace in the interior, to disarm the population, to form no new military posts, and to allow Italian delegates to enter the interior on Government business (*Journ. Central Asian Soc.*, Vol. 8, 1921, Part IV, pp. 177-178).

The development of these events affects to a marked degree the entire policy of Italy toward Mohammedans elsewhere. It is claimed that Italy's withdrawal from Valona in Albania after her prolonged efforts to maintain a naval base there in the negotiations of Paris, 1919–1920, was the chief basis of confidence on the part of the Senussi that Italy would treat fairly with them and with the rest of the Mohammedan world, for it was the Mohammedan population of Albania that particularly feared Italian encroachments upon their territory. It will be remembered that by the secret Treaty of London, in 1915, Italy was to have a large section of Albania about Valona, and there was to be created out of the large block of central Albania an autonomous Moslem state under Italian protection. In framing this policy Italy, Great Britain, and France did not consult the Moslem population of Albania, and the announcement of the proposed action of these allies had aroused a certain resentment.

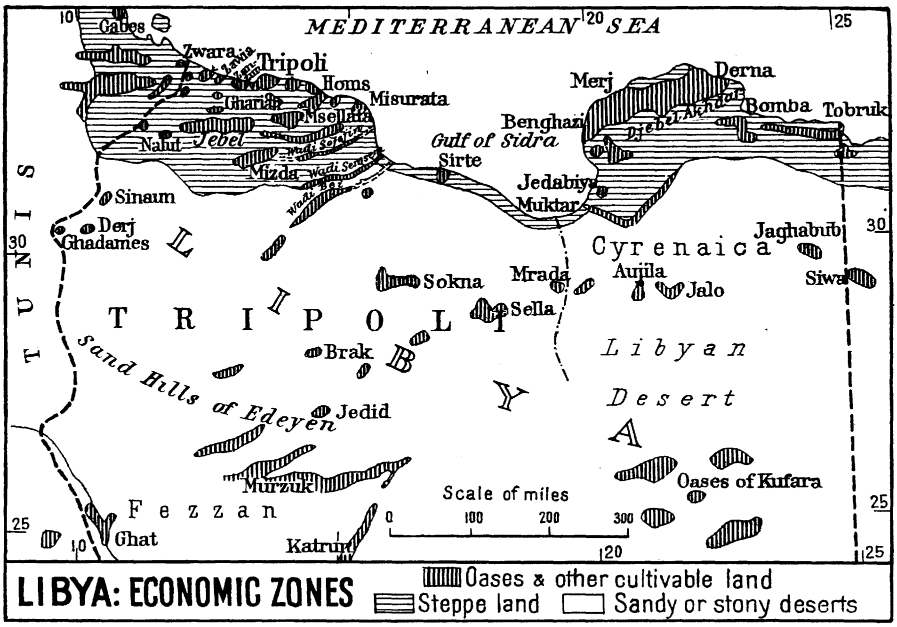

FIG. 1—Sketch map of Libya showing economic zones.

According to an elaborate report of a French mission to Tripoli, which, with Cyrenaica, as shown in Figure 1, forms the Libyan colony (Camille Fidel: Une mission en Tripolitaine, *Renseign. Colon.* (*Suppl. à l'Afrique Française*), 1921, No. 2, pp. 17-38; No. 3, pp. 47-58; No. 4, pp. 94-103). Italy has seized upon this occasion to ingratiate herself with the Mohammedans elsewhere, particularly in Anatolia. Her relations with the Nationalists of Turkey have been conducted in far better spirit than is the case of the French. It would be possible for Italy to take advantage of French and British difficulties with the Moslem and particularly the Arab world and make a common policy difficult. Germany's defeat has withdrawn her influence from the region, and this also opens the door for Italian aspirations.

In the report of Fidel alluded to above we have an admirable summary of the physical and economic conditions in Tripoli which confront Italian statesmen. There is an elaborate table by provinces and types of population (No. 2, p. 20), and the totals are subdivided in the table so as to give also by territories the number of sedentary, semi-nomadic, and nomadic populations. The figures for the three classes named are, in round numbers, 356,000, 128,000, 84,000 respectively.

In passing from the coast toward the interior one finds four zones. The first is the narrow zone of the coast in which palm culture predominates but in which there are also cultivated olives, fruits, grains, and vegetables. The second zone is formed of high plateaus and is marked by deep valleys and steep-sided gorges which have only local sources of water. There are patches of forest, some development of the palm, and, outside the oases, stretches of territory suitable for cereal production and the growth of cultivated trees. These two zones have an extent of 50,000 to 60,000 square kilometers, or one tenth of the total surface of Tripoli; four-fifths of the population of the country; and almost the whole of the agricultural production and the production for export.

The third agricultural zone is constituted by scattered oases separated by great distances, such as Ghadames, Derj, Sinaun, Sella, and in valleys that descend from the mountains on the western border of the Gulf of Syrtes (Sidra). The author supplies figures for the extent of cultivation in the principal oases of this group.

The fourth agricultural zone includes the oases of Fezzan and Ghat, separated from the third by a broad stretch of practically useless desert except for minor oases.

In the cultivated lands the author emphasizes two quite different aspects. The first is characterized by irrigation, as in the oases, where the water table is at a slight distance beneath the surface. The other type is characterized by dryness, where agriculture is dependent entirely upon water that falls from the sky, and only exceptionally upon water supplied by torrents and available during the periods of rain. The oases of the coast are divided into small properties, and some are community lands under group control. The water is found at a depth of two to fifteen meters. European occupation has brought improvement in the method of pumping the water, electricity being substituted in some cases for animal motive power.

The oases of Tripoli produce sufficient for the needs of the inhabitants in good years; but on the whole rather primitive systems of cultivation are in vogue, and in bad years a certain amount of importation takes place. In the steppe lands barley is the chief cereal. It is sown in November and harvested in April, and the average production is 500,000 hectoliters per year. Alfalfa grows without irrigation in all zones of the steppe land of Tripoli, but particularly in the region of Gerian, where there is an immense extent of land devoted to it. It is sold in the markets of Tripoli, Homs, Misurata, places two or three days' journey from the interior by camel transport. A special commission visited Tripoli, in 1913, and its report has furnished a basis for the development of experimental agriculture and for the improvement of agricultural methods. In 1914 an agricultural station was founded, and a study was made of indigenous agricultural methods that can best be applied by Italian immigrants settled upon the land. Protection from the wind is one of the problems that confronts the government, in addition to the improvement of irrigation methods, the selection and adaptation of different types of culture, the technique of cultivation and harvesting, and the introduction of new species. Dry farming has been studied and also the fixation of dunes that threaten the settled places in the oases.

A problem of first importance in the improvement and pacification of the country is the building of new lines of railways and roads and the consolidation of existing ones. In such a land particularly, where settled places are far apart and difficult to reach, the railroad is the prime desideratum in the extension of military authority. It also promotes agricultural production, and this in turn affects the settlement and steadiness of the indigenous population. Of telegraph lines 1,400 kilometers have been constructed, and 1,250 kilometers of roads. The erection of public buildings and the improvement of ports, particularly the port of Tripoli, have been made matters of primary concern on the part of the Libyan government. A considerable quantity of capital distributed among a score of commercial houses or associations has been invested in works of improvement and development. These developments have also stimulated the trans-Saharan commerce that formerly was under the control of the Senussi. The author gives elaborate tables of the commerce of Tripoli, the exports and imports by years from 1912 to 1917 inclusive, and detailed items of export.

A large part of the paper is concerned with the political relationships, especially important because it is only through the control by treaty or by military occupation and pacification of the desert interior that Italy can retain her hold upon the trans-Saharan trade, which would otherwise find its way to the coast of Africa about the Gulf of Guinea, or eastward to Egypt. Though Italian colonies are established only in the coastal belt, the government looks forward to their occupation of localities farther inland, for the coastal region is almost entirely occupied by small indigenous proprietors. Until the interior can be made secure, Italian immigrants will hardly be tempted to advance into it. Italy in fact is fighting a war against the desert and has in her hands a number of distinct agencies. Roads and railroads constitute one agency, her treaty with the Senussi chiefs is a second agency, and her improvement of agricultural conditions that will tempt Italian farmers is a third. The example of the Italian farmer is helpful to the native. It tends to fix him upon the land, to make him less and less nomadic, and if he can work out his destiny with the Italian farmer the government hopes thereby to establish a fraternity of interest between Italian and native which can only result in the more rapid reclamation of the desert. As was said at the beginning of this note, such a policy will permit the penetration of Italian capital in Moslem territory through the whole Near East, an event Italy looks forward to with great anxiety and hope because of her natural lack of raw materials on her home territory. Moreover, Italy is not unmindful of the advantages of a successful penetration of the Mohammedan world in her dealings with France and Great Britain inasmuch as these two powers are neighbors on either side of Libya. In addition, by the Tripartite Agreement of 1920 between Great Britain, France, and Italy, an agreement that displaces various prior treaties and agreements, these three powers are to enjoy equality of commercial privileges in their respective spheres of influence in Anatolia, and Italy has her special interests recognized in so-called zone C, which extends from the Smyrna region, through southern Anatolia, including Adalia, eastward to the Taurus Mountains. Italy's position in the Mediterranean is thus made distinctly stronger politically and economically. There is now in contemplation the introduction in Tripoli of a régime similar to that already established in Cyrenaica. This would give a large measure of local government and would enable the indigenous control of population to continue and to develop. The difficulty is that in Tripoli there is no head of a religious fraternity whose authority is generally recognized, and therefore in dealing with the local sects and groups a decentralized form of control must necessarily be adopted.

A Journey Across the Libyan Desert to Kufara. In the July, 1921, number of the *Geographical Review* reference was made to the remarkable journey to Kufara (Kufra) lately accomplished by Mrs. Rosita Forbes, details of which are now available in the August and September numbers of the *Geographical Journal*. The journey was commenced at Jedabiya, south of Benghazi, on December 8, 1920. The season of the year was unfavorable because of the strong cold winds—one of the reasons why Bedouin travel is done in summer rather than winter. Night temperatures on the outward journey ranged from 3° to 8° C.; noon temperatures rose to 44° C., and the occurrence of cold fog is noted. The real adventure of the expedition began when the oasis of Jalo was left and the expedition entered on the seven-day waterless stretch, traveling through flat, featureless country devoid of vegetation, an "amazing brown flatness, utterly unchanging—an endless, monotonous expanse of hard sand mixed with very fine gravel." For this section all the camel food and firewood had to be carried. The hummocks and dunes marking approach to the first of the Kufara group of oases were eagerly looked for and were first sighted in the morning mirage; "about an hour after dawn in the southern deserts a mirage regularly reveals for a few minutes the country lying anything from 30 to 90 kms. ahead, according to the height of the existing features. The Arabs call it 'the country turning upside down'." The route taken was east of that followed by Rohlfs, and instead of striking Taiserbo the expedition arrived at Buseima, typically situated by salt marsh and lake in a hollow between sand dunes and tabular mountains.

South of Jalo the population of Libya is Zouiyas with a sprinkling of the negroid Tebus, the original inhabitants of Kufara conquered by the Zouiyas a century and a half ago. These Arabs of the Senussi stronghold are a "fanatical warrior tribe, bitterly hostile to the advent of strangers, suspicious, cruel, and treacherous." Mrs. Forbes of course traveled in disguise (as an Egyptian Bedouin) and under letters from the present head of the Senussi confraternity, but the position of the party was extremely precarious. The population of Buseima, numbering some 100 (that of Taiserbo is estimated at 200 to 300) proved definitely hostile, as did that of other oases. In Kufara proper, however, the party was well received and permitted to explore two of the centers—Taj, the sacred city, on cliffs overlooking the wadi, and Jof, the chief mart on the floor of the wadi. It was said that no rain had fallen in Kufara for eight years, but water is found almost everywhere in the wadi at a slight depth; and, thanks to a careful system of irrigation, vegetable gardens as well as palm groves flourish. There is practically no grazing, and camels are date-fed. When the rains of Cyrenaica are abundant the camels may be taken thither. On the other hand when the rains fail caravans come to Kufara seeking date fodder.

The return journey was made via Jaghabub, 80 miles west of Siwa, by a route of 15 days' actual traveling with only one water place, three and a half days from the starting point. Noon temperatures (late January and early February) averaged 33° C., and at night there were three or four degrees of frost. During a sand storm the noon temperature registered only 16° C.; the next midday it rose to 50° C. Leaving Kufara the expedition passed through a rough country, crossing three ranges of low tabular hills. Sandy wastes followed; "for three days we walked across unchanging flat sand covered with minute brown gravel." Jaghabub, which was reached February 10, lies near the Egyptian border and is a *zawia*, or Senussi college, not a political center or market.

Vegetationless Areas in the Libyan Desert. In all the so-called desert regions of the earth there are few areas that can be described as absolutely devoid of vegetation. In the Desert of Atacama Ball saw "a land absolutely without a trace of vegetable life," a comment endorsed by another eminent botanist, Philippi, who there traversed two stretches of 10 and 25 leagues length respectively absolutely without vegetation. In the Libyan Desert en route to Dahkla oasis MacDougal traveled a whole day without seeing a single plant. Another barren tract is reported by H. Hamshaw Thomas in a short discussion of ecological relations in the northeastern part of the same desert (Some Observations on Plants in the Libyan Desert, *Journ. of Ecology*, September, 1921). The observations were made some 25 miles northwest of Cairo. At this point, a mile and a half beyond the westernmost arm of the Nile, the alluvial flat terminates abruptly against a gravel plateau the surface of which is composed of small, wind-polished pebbles of quartz or sandstone. Occasional sand dunes or gravel ridges capped with sand occur, and in places are found the remains of silicified trees probably of late Tertiary age. During the rainy season (January to April inclusive) short-lived annuals appear, but "at a period when the annuals had disappeared I have traversed several miles on patrols without seeing a plant." Perennials are few and far between, occurring chiefly on the sandy patches. The extreme dryness of the air during much of the year, the intense heat of the sun on the quartz pebbles, and the unfavorable nature of the soil appear to be the chief limiting factors to plant growth. In possible amelioration of the last condition the author notes the discovery of an obscure lichen, a form of plant life which may prove to be of more abundant distribution here than has been suspected.

ASIA

Some Geographical Aspects of the Problem of China. The moment is opportune to call attention to an admirable and truly suggestive paper, "The Far Eastern Question in Its Geographical Setting," by Professor P. M. Roxby, of the University of Liverpool (*The Geogr. Teacher*, Vol. 10, 1919–20, pp. 82–90, 142–150, and 253–270). Professor Roxby's modestly stated aim "to chart some of the larger features of the field and to indicate a line of approach to the study of this great region" is to furnish material for an understanding of three great problems—the future of China (its future economic and political status), the competition of Eastern and Western countries in the world markets, the question of Oriental immigration into lands owned or controlled by "white" people.

Much of the difficulty of the Chinese problem is explained by the extraordinary combination of political weakness and social solidarity exhibited by the Chinese people. The basis of Chinese strength lies in the way in which the social and economic fabric has been adjusted to the land through long ages. "Farmers of forty centuries" have been tilling fertile alluvial plains under a monsoonal climate and hydrographic régime that necessitated much ingenuity of water control and irrigation device especially in the deltaic regions. To bring such a land under cultivation called for many arms and much organization, and centralized organization at that. The call for labor sanctioned the family cult. Professor Roxby indeed suggests an earlier basis in the patriarchal society of the western steppe lands whence, according to a commonly accepted theory, came the ancestors of the Chinese people. If this be so, they would bring with them to the valleys of northern China an instinct of family solidarity not less valuable for the new conditions of settled life. Thus "the value of a large family corporation received a new sanctity. It became endowed with the quasi-religious attributes with which it is invested in Confucianism, a code emphasizing precisely those personal and social virtues which were already recognized as necessary to hold this particular type of society together." Hence the endorsement of a state which, appropriate enough at the time, can under modern conditions only be considered as one of overpopulation. Incidentally, however, population pressure seems to have bred a virile stock "accustomed to both long hours of labor and a low standard of comfort, inured to fatigue, and relatively immune from many diseases."

Other early civilizations were founded on a somewhat similar natural basis, Egypt and the several empires of Mesopotamia for instance; but, whereas in these regions of comparatively limited areas state control was absolute, in China with its vast area, its complicated topography, and its difficulty of communications Imperial authority was not incompatible with local autonomy, and that autonomy is primarily of the village, clan-family.

Through lack of the stimulus of contact with rival nationalities the isolation of China has proved another potent factor making against the development of nationalism. The physical barriers of mountain and desert have indeed been penetrated. Through Kansu and the Manchurian gates conquering invaders have come repeatedly, but they have always been assimilated to the mass of the people: China has been surrounded by peoples culturally greatly her inferiors. Conception of "the state as an object of patriotism and of the nation as the real unit of society" are nonexistent for the vast majority of Chinese. The lack of comprehension of the larger unit is seen in the oft-quoted anomaly between the honesty and efficiency of the Chinese in individual relations and the notorious corruption in public affairs and enterprises.

Shaping of the "amorphous" mass of China to a modern body politic involves the question of the preservation of her integrity. Considering the size and physical complexity of the country and the mixed racial origins of the people the unity of civilization and customs is unusual. Religious antagonism also is notably absent save in the steppe borderlands of Kansu and Shensi where a large Mohammedan population has created somewhat of a "northwest frontier" problem. The disrupting forces now in evidence appear to be founded largely on topographic isolation with associated difference of outlook. There are, however, other differences of culture and economy that have been concisely portrayed by Berthold Laufer in his often-quoted paper "Some Fundamental Ideas of Chinese Culture" (*Journ. of Race Devel.*, Vol. 5, 1914–1915). Particularly in the southeast with its complex topography is communication difficult. Canton has its maritime interests and is more open to ideas from overseas. Peking, on the contrary, is in close touch with the grasslands and tends to be dominated by military or quasi-military chiefs. Geographically it would seem that the balance between north and south might be held by the Yangtze provinces, stabilized by the great agricultural, industrial, and commercial interests of that middle region, with the obvious center of Nanking.

The sketch of social conditions in China is brought into higher relief by contrast with Japan. An outstanding fact in the political geography of Japan is the existence until recent times of an internal military frontier. Colonization of the islands by peoples migrating from the Asiatic mainland was accomplished slowly. At the beginning of the Christian era the frontier was south of the Kwanto plain in which are situated Tokyo and Yokohama. The colonization of Hokkaido (the recent change of name from Yezo, barbarian, is noteworthy) can only be said to have begun. Such a condition favored development of the military virtues and retention of a feudal system under military leaders. The force of the ancient patriotism was seen in the successful wars with China and Russia wherein the latest military strategy was associated with the prevailing spirit of *bushido*. The opening up of Japan found her with a leader class ready to embrace a new system of national policy and with the means for carrying it into execution.

Recognition of these deeply-rooted ancient social forces and their basis must be implicit in any study of the problems of the Far East. Professor Roxby has done a service in setting them forth so clearly as a preliminary to consideration of other geographical aspects of the present political situation upon which also significant suggestions are made.

Flood Control As an Aid to Relief from Famine in China. Dr. Charles K. Edmunds, President of Canton Christian College, contributes articles to the *Trans-Pacific* (June, July, August, October, 1921) and to *Asia* (June, 1921) in which he discusses the question of famine in China as caused by drought and flood. The present famine was due to drought, the culmination of three bad years. It may be compared to the catastrophes of 1878 and 1832 when the same sections of Honan, Shansi, Shensi, Shantung, and Chihli were devastated. In analyzing the records of famine over a period of 1,000 years Dr. Edmunds finds that 800 widespread droughts occurred, 91 being of special severity. While such droughts cannot be eliminated, much might be done to mitigate their severity. There is need of afforestation and more scientific agriculture, of improved methods of transportation and irrigation, and greater knowledge of meteorological and hydrographic conditions, especially as connected with water control and thus with the prevention of famine by flood.

While the lower reaches of all the important rivers of China are subject to heavy flood, it is the Yellow River that is particularly affected. A recent survey of the problem here has been made by the American engineer John R. Freeman acting for the Grand Canal Improvement Board. The volume of the Hwang Ho is comparatively small as it enters the sea—the discharge at high flood is only half that of the Yangtze at low water—but the amount of silt carried is great, and with subsidence of the summer floods there is considerable deposition. During flood time, however, the river tends to re-excavate its bed in these temporary deposits. For instance, observations during the flood in 1919 showed that along 100 miles of its course the river had dug a bed 10 feet deep. It is estimated, in fact, that 99 per cent of the total load of sediment is carried out to sea. This suggests the solution proposed by Mr. Freeman. He would straighten the course of the river, confining it in a narrow channel by new dikes and thus compelling it to scour its own bed. Water for irrigation would be drawn off by pipes through the dikes at suitable points; and much land now waste, including that between the old and proposed dikes, might be reclaimed.

The Hwang Ho, by usurping in past times the courses of the Wei to the north and the Hwai to the south and raising their beds, has diverted their courses. The former now flows to the sea through the Hai Ho at Tientsin, the latter reaches the Yangtze via a system of lakes draining to the Grand Canal. The Hwai in particular offers hydrographic problems. The lower basin is exceedingly flat, and the river is furthermore prevented from finding a new course eastward to the sea by the Great Maritime Dike built 1027 A. D. and the dikes of the Grand Canal. Streams draining from the Shantung hills to this portion of the North China plain are also held back and during flood contribute to the excess of water carried to the Yangtze. The proposal for control is similar to that for the Hwang Ho. It involves the construction of a straight channel confined by strong dikes whereby the flood waters from the entire area can be united and carried off direct to sea. At the same time some of the lake areas could be drained and given over to agriculture, others could be improved as storage reservoirs for irrigation purposes. Afforestation in Shantung and the creation of reservoirs in the borders of the hills would further aid regulation of flood waters. Included in the drainage problems of the plain between Hwang Ho and the Yangtze Kiang is rehabilitation of this section of the Grand Canal and thereby a material help to communication.

A Recent Study of Life Zones in Southeastern Asia. The belt of very deep valleys and high mountains compressed within narrow limits between the two great elbows of the Yangtze Kiang on the east and the Brahmaputra on the west was long a region of uncertain physical geography. The explorations that have revealed its character are matters of recent times and are still far from being complete. Their chief result has been to lay down upon the maps the principal orographic lines and the courses of the three closely spaced and parallel streams that drain the area—the Irrawaddy, the Salween, and the Mekong.

Among the important contributory explorations are those of the naturalist F. Kingdon Ward, the results of which have appeared in a number of books and articles, the latest being the volume "In Farthest Burma" (1921). A hydrographic study recently discussed in the *Geographical Review* (Vol. 7, 1919, pp. 413–415) is now followed by "The Mekong-Salween Divide as a Geographical Barrier," (*Geogr. Journ.*, Vol. 58, 1921, pp. 49–56) which describes the region in further detail, and we now have the relief features for the first time brought into something like an accurate relation to the distribution of life. One of Captain Ward's main contentions is that we have here a quite distinct contrast to the life conditions that obtain in the Himalaya Mountains. In the matter of control over major distributions the Himalayan ranges form part of the boundary between the Oriental and Palearctic regions. East of the elbow of the Brahmaputra the line of separation between northern and southern faunas is the Yangtze-Yellow River divide, or watershed, except for the ten degrees of longitude between 95° and 105°, where no clearly defined boundary exists owing to the north-south trend of the mountains and valleys within the aforementioned narrow belt. If the Mekong-Salween divide, and the parallel chains, break the continuity of the major line between northern and southern life forms and confuse distributions and boundaries, they also, because of their southward trend over nearly fifteen degrees of latitude, form a dividing line between two subdivisions of the southern, or Oriental, belt that extends from the Arabian Sea to the Pacific. Of this fifteen degrees five hundred miles are highly effective boundary, though the northern and southern ends are less so. "The faunas of the Indian and Chinese subregions of the Oriental region are in fact surprisingly different." The boundary between the two is the Mekong-Salween divide, and it is this feature rather than the north-south migration and commingling of Oriental and Palearctic forms that is the chief distinction of the narrow mountain belt under consideration. The author lists a half dozen animals characteristic of the typical Indo-Burmese fauna that are not found east of the Salween.

In the northwestern part of the narrow belt under consideration, namely in the unexplored Salween-Brahmaputra divide region, there appears to be a transference of the function of a faunal and floral barrier from the Salween range to the Salween-Brahmaputra divide. This transference of function takes place at the 28th parallel, but toward the northwest its details have still to be worked out by further exploration. Hardly less marked is the effect of the Mekong-Salween divide in cutting off an eastern Asiatic floral region. Many genera and species are confined to the western side of the barrier; and many others are poorly represented east of the barrier, both in species and numbers. Likewise a number of plants east of the Mekong do not cross the divide to the west. Only at the southern end of the barrier, where the mountains are lower, is there intermingling in a broader zone.

The author would recognize in southeastern Asia a new subregion among Asiatic life zones, to be called Sino-Himalaya. "This would comprise the Himalayan and perhaps Trans-Himalayan ranges as far north as the Salween; the Burma-Yunnan ranges as far east as the Mekong down to the twenty-first parallel of latitude; and mountainous western China as far east as the province of Hupeh northwards to the Yellow River. This mountain region has a common flora and fauna and is characterized by many endemic genera. It cannot conveniently be treated as part of the eastern Asiatic region on account of its strong Indo-Malayan connection; similarly its Palearctic connection is vitiated by its Oriental relationship. On the other hand it is characterized by numerous endemic mammals. . . ."

AUSTRALASIA AND OCEANIA

The Origin of the Salt Deposits of South Australia. The origin of the salt deposits of South Australia is discussed by R. Lockhart Jack in a report on the salt and gypsum resources of the state (*Geol. Survey of South Australia, Bull. No. 8,* Adelaide, 1921). Salt is widely distributed throughout South Australia, as is the occurrence of saline ground water. At present the chief deposits worked are in Yorke's and Eyre's Peninsulas and Kangaroo Island. The lake basins, or playas, contain water from a few inches to several feet deep during the season of winter rains, and with the disappearance of the water in summer there is reaped the salt harvest from a crust ½ inch to 3 inches thick. The workability of deposits farther inland is dependent on improvement of transportation facilities. Since construction of the Transcontinental Railway exploitation of Lake Hart and other interior basins has begun.

Three theories are advanced in explanation of the deposits. The first derives the salt from beds of rock salt leached by the accession of ground water during the rainy season, the second from "fossil" salt held in the interstices of the marine beds during deposition. Neither of these theories is supported by the geological facts as known today. The southern portion of Yorke's Peninsula may be taken in illustration. Overlying basal rocks of Pre-Cambrian age is a relatively impervious argillaceous Permo-Carboniferous till, overlain in turn by patches of Tertiary limestone, clays and sands, the last of eolian origin. The capping layers are thin, averaging less than 20 feet, relatively porous and capable of absorbing the whole normal rainfall. Wind action, erosion, and solution have excavated numerous pans, or lakes, whose bottoms are formed by the impervious till thus affording excellent opportunity for the accumulation of salt. In none of the beds is rock salt known to occur. Salinity of the waters held in the beds may be explained by impregnation from above. In fact, in rocks of every type and geological age in South Australia, wells and mines have yielded both fresh and saline waters. "Fossil" salt could hardly be held in the till: from the thin porous Tertiary beds it would apparently have been leached out long ago or, if held in such condition as to be released only on erosion of the containing rock, would be available only at a very slow rate. It appears, however, that there is no definite proof of decrease of output; though the amount fluctuates according to seasonal conditions. The salt is said to be of "cyclic" origin, derived from the evaporation of sea spray in the air, blown over the land and washed down to the surface by rains. Thence it may be removed by the run-off, may be left in the soil by evaporation, or may be carried down to the ground water making the latter more or less saline and, where topographic and geologic conditions are right, contributing to the formation of salt lakes. Climatic conditions are highly favorable to genesis of the salt deposits. The rainfall is small and run-off is correspondingly feeble. Rains are seasonal, falling during the winter in the form of numerous light showers. The average for Yorke's Peninsula is 17.5 inches distributed over 100 days. Evaporation is high. The 50-inch line of net annual evaporation crosses the head of Spencer Gulf.

The association of gypsum with the salt is so marked as to suggest community of origin. It seems probable that a large proportion has been carried over from sea water with the cyclic salt. With the gradual concentration of the water in the salt lakes the gypsum crystallizes out and subsequently, where not protected by a layer of the hygroscopic salt, is blown by the desiccating northerly winds to form belts of gypsiferous earth or even dunes at the southeastern ends of the lakes.

Dust Whirls in Western Australia. In the Proceedings of the Royal Society of Victoria (Vol. 32, 1920, pp. 314–322) J. T. Jutson, who has written on various phases of erosion under arid or subarid conditions in Western Australia, briefly describes the dust whirl as a factor operating therein. Dust whirls, as Mr. Jutson points out, have been described by W. M. Davis (Elementary Meteorology) and E. E. Free (*U. S. Dept. of Agric. Bur. of Soils Bull. 68*, 1911), the latter giving a useful list of references; but there are few recorded descriptions of their occurrence in Australia. The present paper notes the occurrence of 43 dust whirls in Western Australia, where they are locally known as "willy-willies," and describes one in full. The whirls were observed in the northern part of the Coolgardie gold field in a subarid region (rainfall averaging 10 inches or less). The whirls were of varying height—from a few feet to some thousands—and varying diameter. They appeared as columns rotating in clockwise or anticlockwise direction, the latter predominating, and moving in linear directions. They were commonest in the summer and on days of calm or of only light airs. Even the smallest whirls were violent in action, and it is evident from their numerous occurrence that they must accomplish a great deal in the way of erosion and transportation. Dust is carried high and far and undoubtedly is "exported" from the place of origin to add to the thickness and mixed character of the soils outside the region. Sand settles locally, tending to drift in the hollows and contributing to the shaping of the vast high level plain of the south-central section of Western Australia.

PHYSICAL GEOGRAPHY

Peat Deposits As Evidence of Climatic Change. The realization that climate is by far the most variable geographical factor is leading to a constantly increasing study of climatic changes. One of the interesting phases of this study is the way in which new lines of evidence are being sought out. To the ordinary eye all the layers of a peat bog seem much alike unless marked by sand, clay, or stumps. The specialist, however, finds that equally important phases are indicated by numerous less obvious conditions. For example, where the ordinary fibrous matter of peat is mixed with large amounts of decomposed or macerated material a condition of high water and abundant rain is indicated. Where the material is almost purely fibrous, no matter whether it forms fine threads or is coarse and woody, relatively dry conditions are usually inferred. Again, the chemical structure of the peat, that is the extent to which it is colloidal, or impregnated with lime, shows the degree of concentration of salts in the water and thus furnishes a key to the climate. In addition to this, microscopic examination of the traces of leaves, pollen, seeds, and other plant materials, washed or blown from surrounding trees, reveals unmistakable evidence of the climate in the regions surrounding the bog.

On the basis of such criteria Mr. A. P. Dachnowski has been making a study of the peat formations of the eastern United States, especially Ohio (Peat Deposits and Their Evidence of Climatic Changes, *Botanical Gazette*, Vol. 72, 1921, pp. 57–89). By correlating the peat bogs and the moraines along a line running northward from Canton to Cleveland, Ohio, he finds evidence of an irregular series of climatic changes since the last glaciation. While the author's conclusions are as yet purely tentative, they are of considerable interest for comparison with conclusions based on other evidence. As nearly as they can be defined the main stages since the height of the last glaciation are as follows:

1. The cold period of the main advance of the Wisconsin Ice Sheet.
2. "A time during which a cool and dry climate bordered closely the glacial regions." This period was apparently double, there being a break in the middle. "It was probably a period of winds, cool from the ice sheet, and of loess deposition." On the glacial till left exposed by the retreating ice, marsh plants and low shrubs appear to have been the only dominant plants.
3. A second great advance of the ice, the Later Wisconsin, probably not so severe as the first.
4. "A prolonged warm and humid climate—this appears to have been the period of invasion and wide dispersal of forest trees from the south and of a more northerly distribution of certain species than is now recorded for them." This period, it should be noted, resembles the warm, humid period which Brooks, as explained elsewhere in this number of the *Review*, places at 4000 B. C. Dachnowski, however, gives no clue to its date. It may be earlier than 4000 B. C.
5. "A return to cooler and drier climate."
6. "A temperate and more humid period than exists at the present time in the same localities."
7. "The present period is probably approaching a climate of rising temperatures and (or) decreasing precipitation. The botanical data, however, are as yet insufficient to permit more definite conclusions, and they are wholly inadequate for drawing a parallel between the past climatic conditions of different countries."

Although Dachnowski's studies are only preliminary, they agree with those of a constantly growing body of investigators in showing not only how numerous the climatic pulsations have been since the glacial period, but how far toward our own day they continue.

Ellsworth Huntington

GEOGRAPHICAL NEWS

The Centenary of the Geographical Society of Paris. In July last the Geographical Society of Paris celebrated the centenary of its foundation. The several functions included a meeting presided over by the President of the Republic and attended by representatives of official institutions and learned societies, among them a number of foreign geographical societies. Mr. W. L. G. Joerg represented the American Geographical Society. The opening of the meeting by M. Millerand was followed by addresses by Prince Roland Bonaparte, President of the Society, the Vice-President, M. Henri Cordier, Sir Francis Younghusband, President of the Royal Geographical Society, and other distinguished guests by whom tribute was paid to the work of the Society. The Geographical Society of Paris has been closely associated with the colonial and economic expansion of France that, following the Restoration and the general peace of the second decade of the last century, has been maintained ever since. French geographers and explorers have played an important part in the opening up of Africa and the creation of a great French Empire therein, and this is reflected in the wealth of African material contained in the publications of the Society. The Society has consistently given support to African exploration from the time when the award of 10,000 francs, offered to the first French traveler to set foot in Timbuktu, was made to Caillé in 1828. Recent expeditions organized by the Society include the Foureau-Lamy mission across the Sahara to the Congo (1898), the Lenfant mission to the Niger-Benue-Chad region (1903), the mission for the study of sleeping sickness (1906), the mission to the Ivory Coast for geodetic and forestal studies (1908), and the scientific mission to Morocco. The Ollone mission to western China (1906), was instituted by the Society, which has also had part in other important Asiatic explorations.

At home the Society has been responsible for the creation of provincial geographical societies (after the decentralization movement of 1870) and the Society of Commercial Geography of Paris (1876). Besides numerous special publications the Society has published its bulletin continuously from 1822, since 1900 under the title of *La Géographie*. The centenary is commemorated in a special number, July-August, 1921.

The Explorers Journal, A New Publication. The first number of the *Explorers Journal*, a publication of the Explorers Club appeared in November of last year. The *Journal* which will be issued monthly is primarily designed to keep members, especially non-resident members fully informed of the affairs of the Club.

The first number details the plans for purchase of a new club house at 47 West 76th Street and announces a series of symposia on the technique of exploration to be held during the winter. Notes on current exploration will be an important feature of the *Journal.*

OBITUARY

William Speirs Bruce, the distinguished Polar explorer and naturalist, died in Edinburgh on October 29, 1921, at the age of 54 years. Dr. Bruce began his career of Polar exploration as naturalist to the Scottish Antarctic expedition of 1892-1893. He acted as zoölogist to the Jackson-Harmsworth expedition to the Arctic, 1896-1897, and as naturalist to Major Andrew Coats's expedition to Novaya Zemlya and the Barents Sea in 1898. He was leader of the *Scotia* (Scottish National Antarctic) expedition of 1902-1904 and editor of the reports of the scientific results, several volumes of which have appeared. As an explorer Dr. Bruce's name is also particularly associated with the Spitsbergen archipelago to which he made a number of journeys, the first as naturalist to the Prince of Monaco's expedition of 1898-1899, the last in 1920. As founder and director of the Edinburgh Oceanographical Laboratory Dr. Bruce has carried on in worthy fashion Edinburgh's traditional interest in modern oceanography. In 1920 he was awarded the David Livingstone Centenary Medal of the American Geographical Society, an account of the presentation of which appeared in the July, 1921, number of the *Geographical Review.*

Manuel Vicente Ballivián, the eminent Bolivian publicist and geographer, died in La Paz on August 7, 1920, at the age of 73. The greater part of his life had been spent in service of the state, first in the Bolivian Legation at Paris, then acting successively as commissioner of the territories of northeastern Bolivia—where he carried out a series of arduous explorations—, as head of the Department of Immigration and Statistics, and as minister of Colonization and Agriculture, in all of which capacities he constantly labored to promote the geographical and economic knowledge of his country. It was in recognition of his notable accomplishments in this field that he was awarded the David Livingstone Centenary Medal of the American Geographical Society in 1917. Señor Ballivián was president of the Geographical Society of La Paz and author and editor of numerous works on Bolivian history and geography.